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ABSTRACT

The three papers in this symposium explore various aspects of communication apprehension. The first paper develops a theoretical model which attempts to explain the causes of oral communication apprehension, in terms of family structure and levels of communication skill development. A study of high school students indicates that children from large families report much higher levels of oral communication apprehension than do children from moderately sized or small families. The second paper reports a study which indicates that interpersonal distance preferences for college males are, in part, a function of an individual's level of communication apprehension. No similar relationship was found for females. The third paper reports an exploratory study of college graduates which indicates that high communication apprehensives are more likely to marry immediately after graduation from college and to have fewer children than are moderate or low communication apprehensives. Low communication apprehensives were found to be more likely to describe their marriages as very unhappy and, if divorced, to perceive their spouses as having most wanted the divorce. (Author/AA)

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Aspects of Communication Apprehension:

A Symposium

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CS 501 661

ORAL COMMUNICATION APPREHENSION AS A FUNCTION OF FAMILY SIZE: A PRELIMINARY INVESTIGATION

by

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Abstract

Previous research relating to oral communication apprehension has been focused primarily on its correlates and effects in the individual's life. Little has been done to identify the causes of oral communication apprehension. In this paper a theoretical model is proposed which attempts to explain how oral communication apprehension is caused. The primary causative agents included in the model are family structure and levels of communication skill development. A study is reported which indicates that children from large families report much higher levels of oral communication apprehension than do children from moderate sized or small families. Since the study provided a test of only one major component in the theoretical model, additional research involving the remaining components is recommended.

Competitively selected paper presented at the annual convention of the Eastern Communication Association, New York, March, 1977.

Oral Communication Apprehension as a Function of Family Size: A Preliminary Investigation

Previous research which has investigated the behavior of people with high levels of oral communication apprehension has found a consistent pattern of withdrawel from and avoidance of communication (McCroskey, 1976). The results of such behavior have been found to include negative perceptions on the part of other people in the person's environment (McCroskey, Daly, Richmond, & Cox, 1975; McCroskey & Richmond, 1976), lowered success in school (McCroskey & Andersen, 1976), less liklihood of obtaining employment (Daly & Leth, 1976), and less liklihood of retaining employment (Scott, McCroskey, and Sheahan, 1976).

While much is now known about the behavior of people with high communication apprehension and the resultant impact on their lives, little is known about the causative agents which produce communication apprehension in individuals. The purpose of this paper is to advance a theoretical model which explains the development of communication apprehension in children and a preliminary test of that model.

A Theory of Oral Communication Apprehension Development

Recent research suggests that family size is a major contributor to differences among children. In a study of nearly 400,000 19-year-olds, the entire male population of the Netherlands who reached 19 years of age between 1963 and 1966, Belmont and Marolla (1973) found that intelligence and family size were nighly associated. Children from larger families had lower IQs than children from smaller families and, within a constant family size, the children born early had higher IQs than the children born later.

A subsequent analysis of these data by Zajonc and Markus (1975) indicated that 69 percent of the variance in IQ scores could be accounted for by birth order, family size, and spacing between children. When these sources of variance were controlled, interfamily variables such as socio-economic class failed to account for significant variance in IQ. While there may be real differences in IQ levels of children from different socio-economic groups, this variance can be accounted for by family size and spacing without reference to the demographic variables.

The theoretical explanation for the predictive power of birth order, family size, and family spacing advanced by Zajonc and Markus (1975) is of particular import, for it provides an analog for the theory to be advanced in this paper. Zajonc and Markus (1975) argue that, in large part, the intellectual development of a child is a function of the intellectual stimulation the child receives within the family. Thus, if other things are equal, the child with very bright and intellectually stimulating parents will have greater intellectual development than the child of parents with lesser intellectual ability. But, other things are not equal, even for two children in the same family. Intellectual development is not only a function of parental stimulation, but also of stimulation from all other family members as well. Thus, the best predictor of the intellectual development of the child is the

average of the intellectual stimulation he or she receives. Since children typically have lower intellectual capacities than adults (when not corrected for age), the more children in a child's environment, the lower will be the average of that child's intellectual stimulation. The data analyzed by Zajonc and Marcus (1975) provide considerable support for this theory.

The development of intellectual ability and the development of communication ability have strong similarities. They are analogous, that is, not isomorphic. It is obvious that under normal circumstances children develop the language of their parents; children of English speaking parents learn English - not Korean, children whose parents speak with a cockney accent will develop that accent - not Southern American. Obviously, then, communication development of a child is, at least in part, a function of communication stimulation from the models in the child's environment. This applies not only to the type of language the child learns to communicate (eg. English or German), but also the quality of the skills that child develops. Thus, if other things are equal, the child with parents who are highly skilled communicators will develop better communication skills than the child of parents with lesser skills. But, once again, other things are <u>not</u> equal, even for two children in the same family.

Communication development is not only the function of interaction with parental models, but also of interaction with all other family members as well. Thus, the best predictor of the communication development of the child is the average of the communication models with whom he or she interacts. Since children typically have lesser communication skills than adults, the more children in a child's environment, the lowe will be the qualitative average of the communication skills of the models with whom the child interacts. We should predict, therefore, that as the number of children in a family increases, the quality of the communication skills of the children in that family decreases.

No research has been reported which specifically tests this theory with respect to the total communication development (verbal and non-verbal) of children. However, some research on verbal development provides supportive evidence. Lehman (1971), for example, found that 18-34 month old children from middle-class families with no siblings had superior language development to those with a large number of siblings. Additional support is provided for the hypothesized long-term impact of birth order and composition on communication development by Breland (1973). In Breland's study of nearly 800,000 students who were administered the National Merit Scholarship Qualification Test, it was found that early born and first born children registered significantly higher verbal skills (within constant family sizes) and that closely following siblings tended to score lower than those with a larger time gap between themselves and their older brother or sister.

On the basis of this research we may accept tentatively the hypothesis that increased family size results in lower levels of communication skill development. We need to consider why this may be true.

Theories of language and communication development emphasize not only modeling but also reinforcement patterns as causative agents. Children exposed to good (or bad) communication models will attempt to emulate those models. If the child subsequently is reinforced for the communication behaviors exhibited, they will tend to become a permanent part of the child's behavioral repertoire. If the child is not reinforced for the communication behaviors exhibited, they will tend to be extinguished. The development of confidence in one's communication ability, the reciprocal of communication apprehension, is most likely the result of positive reinforcement for successful communication efforts.

Presuming the above analysis is correct, we can integrate it with our theory relating to family size and communication skill development to explain how communication apprehension may develop. The following propositions emerge:

1. Reinforcement for communication in childhood results in increased confidence in the child about her or his communication; lack of reinforcement and/or aversive responses to a child's communication attempts result in reduced confidence, ergo increased communication apprehension.

2. A child who develops and exhibits skill in communication early will receive more reinforcement than other children.

3. With biological maturation held constant the acquisition of communication skills is a function of the child's interaction with communication models in the child's environment and the amount and quality of reinforcement the child receives from that interaction.

4. On average, the best available communication models for a child are the child's parents, but the more children present in the family, the lower the percentage of the total interaction of the child with the parents.

5. In the typical family, the communication models that will provide the most discriminating reinforcement for the child will be the parents; other children are more likely to provide indiscriminate reinforcement according to their own needs or to ignore communication attempts of other, particularly younger, children.

The theory advanced here, therefore, argues that as the number of children in a family increases, the children have, on average, poorer communication models in their environment and, on average, the quality of discrimination in reinforcement for communication decreases. Children become communication models, for both younger and older children but particularly for younger ones, and those models are inferior to the adult, parental models. In addition, children are less likely to make high quality discriminations in their reinforcement of the communication behaviors of other children, thus good skills receive less reinforcement than would come from adults while poor skills receive more reinforcement than would come from adults. Consequently, as family size increases, average communication skill levels of the children, particularly the younger children, decrease. Since in-

creased communication skills results in increased probability of positive reinforcement, from both parents and other children, and positive reinforcement produces increased confidence on the part of the child, children from larger families will develop less confidence, thus more communication apprehension, than children from smaller families.

Three additional propositions provide amplification of this theoretical model:

6. The impact of family size on communication apprehension will be increased for later-born children. Early-born children will have a larger portion of their formative years in a smaller family unit.

7. Wide time gaps between the births of children in the family reduce the impact of family size on communication apprehension while small time gaps or multiple births increase the impact of family size on communication apprehension. If older children are approaching adulthood when the new child is born, the qualitative average communication models and average reinforcement discrimination levels in the family are closer to the parental norm for that child. In addition, the communication abilities and confidence levels of the older children are more firmly established and less likely to be affected by the new sibling. The obverse of this should hold true when siblings are closer in age, particularly in instances of multiple births

8. The absence of one parent from the family unit increases the impact of family size on communication apprehension. In fatherless or motherless homes (presuming there is no substitute available, eg. stepfather, stepmother), the average quality of the communication models in the family unit is reduced much more by the birth of an additional child than when two parental models are present. In addition economic demands may reduce the time the remaining parent has to interact with and reinforce the children.

A Preliminary Test of the Theoretical Model

The theoretical model advanced here argues that family size, birth order, sibling spacing, and number of available parental models contribute to the variability in communication apprehension among young people, and subsequently adults, present in society. The study reported below was designed as a preliminary test of the model. As a preliminary test it was not intended to be either a definitive study or an adequate test of the complete model. Rather, it was restricted in scope to the family size component of the model, with emphasis on extreme differences in this component. The results are offered here, therefore, not as proof that the theoretical model is correct, but rather to indicate that more intensive testing of the model is likely to be fruitful.

Hypothesis. The hypothesis tested in this study was that children from small families (operationalized as only children) will report lower levels of communication apprehension than children from moderate sized families (operationalized as 2-6 children) who will in turn report lower communication apprehension than children from large families (operationalized as over 6 children).

Procedure. The subjects in this study were 128 students in a medium sized Catholic high school in the Eastern United States. A two-page questionnaire was administered to the subjects by their classroom teacher. One page of the instrument asked the subjects to list all of the children in their family, including themselves, by first name. The other page was a self-report measure of oral communication apprehension. The measure was a short form (10 item) version of the PRCA (McCroskey, 1970). In pilot testing with other secondary school students (N = 1106) the instrument was found to yield an internal (split-half) reliability estimate of .88. It was also found to correlate with the longer PRCA form at .92 with another sample of subjects (N = 275). Estimated internal reliability in this study was also .88.

The data were submitted to analysis of variance with the three levels of family size serving as the independent variable and the short-form PRCA scores serving as the dependent variable. Directional t-tests were computed to test the research hypothesis. Alpha was set at $p < .05$.

Results. The analysis of variance indicated a significant effect for family size ($F = 4.65$, $p < .02$). The obtained means were in the direction hypothesized; small family $\bar{x} = 23.25$; moderate family $\bar{x} = 26.05$; large family $\bar{x} = 32.36$. The subsequent t-tests indicated that the mean for the students from large families was significantly higher than that for either medium ($t = 2.76$, $p < .05$) or small families ($t = 2.72$, $p < .05$). The differences between the means for the small and moderate-sized families, although in the hypothesized direction, was not statistically significant ($t = 1.06$).

Discussion

Given the small sample of subjects employed in this preliminary study and the fact that three of the four central elements in the theoretical model were not controlled in the study, the results cannot be interpreted as conclusive support for the model. Nevertheless, the results are very encouraging.

The measure of communication apprehension permitted a potential range of scores from 10 to 50. The obtained range was from 11 to 47. Thus, the mean difference of 9.11 between large and small families was very large and meaningful, it represents over 25 per cent of the actual difference between the highest and lowest individual scores in the sample. Consequently, it is not surprising that there was little overlap in the score distributions of children from small and large families. If we accept the standard for classifying high apprehensives commonly employed in previous research (c.f. McCroskey, 1972), that is,

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INTERPERSONAL SPACE PREFERENCES AS A FUNCTION OF SEX AND COMMUNICATION APPREHENSION

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ABSTRACT

A study is reported which indicates that interpersonal distance preferences for males are, in part, a function of an individual's level of communication apprehension. No similar relationship was found for female subjects. The results for males are explained in terms of an interaction among desire to avoid communication, eye contact, and degree of positive affect for another person in a dyad.

A simulation method for obtaining interpersonal distance preferences, which appears to generate valid data, is described and suggested for future use.

Competitively selected paper presented at the annual convention of the Eastern Communication Association, New York, March, 1977.

Interpersonal Space Preferences As A Function of

Sex and Communication Apprehension

The distance between people in interacting dyads has been the focus of numerous studies. It is clear that a person will adjust the distance between her/himself and another member of a dyad in order to achieve a 'comfortable' interpersonal spacing relationship. While some general norms for comfortable interpersonal distances have been suggested (cf. Hall, 1959) for the North American culture, many variables have been found which limit the generalizability of any set of distance norms.

In a summary of the literature in this area, Knapp (1972) notes the following variables which have been found to impact interpersonal spacing preferences: sex of the dyad members, race of the dyad members, superior-peer-subordinate relationships, familiarity of the dyad members, degree of friendship, status, interaction setting, topic of interaction, physical appearance, and desire for approval. Knapp (1972) also notes that research has examined the relationship between personality type and interpersonal distance preference. Unlike the research involving other variables, the research relating to personality variables, particularly introversion-extroversion, has not produced a consistent pattern of results. This may account for the fact that relatively few studies have been reported related to personality and interpersonal distance, or the less than clear picture that may be drawn from the available studies may be a reflection of their small number.

In recent years one personality-type variable, oral communication apprehension, has received increasing attention from communication researchers. Oral communication apprehension (CA) has been defined as 'an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons (McCroskey, 1976). The research involving CA has indicated a consistent behavioral pattern of people with high levels of CA which involves avoidance of and withdrawel from communication encounters (McCroskey, 1976).

Although very little of the previous research involving CA has included an examination of nonverbal communication behaviors, McCroskey (1976) has speculated that CA would be reflected in a variety of nonverbal communication behaviors. Of particular consequence for the present research is his hypothesis that "since high communication apprehensives desire to avoid communication... they will establish greater personal space distances... than persons with lower levels of CA (McCroskey, 1976, p.43). While this hypothesis is intuituvely satisfying, the complex interaction of nonverbal communication behaviors found in many previous studies (Knapp, 1972) leads us to be hesitant to accept it on its face. For example, in the same article McCroskey (1976) notes that the 'establishment of eye contact generally increases the probability of communication attempts and the continuation of interaction between people' (p. 43). This observation led McCroskey to hypothesize that, since people with high CA wish to avoid communication, 'they will engage in less direct eye contact and less prolonged eye contact than people with less communication apprehension' (1976, p.43). This hypothesis is also intutitivly satisfying, but if we consider it along with the previous hypothesis, we would be suggesting that as people move closer in

their interpersonal interaction their level of eye contact increases. This suggestion is directly contrary to the findings of previous research that has examined the relationship between interpersonal distance and eye behavior. In general, this research has found that as distance increases, eye contact increases (cf. Goldberg, Kiesler, and Collins, 1969), particularly for males.

Because of the probable interaction among desire for communication, interpersonal distance, and eye contact, simple main-effect predictions such as those advanced by McCroskey (1976), while apparently appropriate in isolation, are very likely to be confounded in actual interaction behavior. Consequently, since the current investigation is only an exploratory study, we chose to advance a research question rather than a specific hypothesis. That question was "Do high and low communication apprehensives differ in their interpersonal distance preferences?"

Method

A sample of 316 college students enrolled in basic communication classes were administered the Personal Report of Communication Apprehension (PRCA; McCroskey, 1970) to determine their level of CA. The Ss who scored beyond one standard deviation above the mean for the sample were classified as high apprehensives (N=55), and those that scored beyond one standard deviation below the mean were classified as low apprehensives (N=42). The estimated internal reliability (split-halves) of the PRCA was .92.

Interpersonal distance preferences were measured through a simulated interaction procedure. Ss were presented a diagram of a room described as 15 feet by 18 feet, but drawn to a scale where one millimeter equalled 1.44 inch. Within that room diagram was placed a dot. Ss were instructed as follows: "Presume you are to enter the room represented by the box below to talk with (person varied, see below). The dot in the box represents where (the person previously identified) is sitting. Please place a dot in the box where you would prefer to sit to talk with (this person)."

Since previous research (cf. Knapp, 1972) has indicated that sex of both dyad members, degree of familiarity between dyad members, and degree of friendship between dyad members have an impact on interpersonal distance preferences, each S was asked to repeat the above described procedure for six target persons (order determined randomly for each S). The six targets were: best friend, opposite sex; best friend, same sex; a person of same age and sex not met previously; a person of same age but opposite sex not met previously; the teacher that 'you like most'; and the teacher 'you like least'.

Prior to further data analyses, the obtained mean distances for each target were transformed to inches so that the obtained distances could be compared to previously suggested norms in order to check the validity of the simulated interaction procedure employed. On *a priori* grounds, considering previous research (cf. Leathers, 1976, p. 50), it was believed that the two best-friend inductions were operationalizations of 'intimate' relationships, the two new acquaintance inductions and the best-liked-teacher induction were operationalizations of 'personal' relationships, and the least liked teacher was an operationalization of a 'social-consultive' relationship. Table 1 reports the expected distances for each of these relationships and the observed means for both males and females. All but one of the expectations was confirmed. The one ex-

ception, male Ss with best friend of same sex, also probably should be considered as meeting expectations, since previous research has consistently observed that males in the North American culture avoid intimate distances with other males, even good friends, because of the culturally inculcated association of male-male touching with homosexuality. On the basis of this preliminary analysis, it was concluded that the simulation procedure employed yielded valid data relating to interpersonal distance preferences.

The next step in the data analyses was the computation of a series of two-way analyses of variance with the distance preferences for the six target people serving as dependent variables. The independent variables in these analyses were sex of subject, male and female, and CA level of subject, high and low (moderates were not included in these anlayses since they were not involved in the research question). The alpha level for significance was set at .05.

Results

Significant ($p < .05$) interaction effects were obtained for the analyses for both best-friend targets, both teacher targets, and the new person of the same sex target. For the new person of the opposite sex target, significant effects were observed for sex of subject ($F = 9.34$, $p < .05$). Females ($\bar{x} = 36.9$ inches) preferred greater distances than males ($\bar{x} = 25.5$). Apprehension effects approached significance ($F = 3.57$) but did not meet the established significance criterion. High apprehensives yielded a mean preference of 30.0 inches while the low apprehensive preferance was 32.3.

Because of the obtained significant interactions on the remaining targets, differences among means were probed employing the Sheffé procedure. The obtained means, converted to inches, for the various targets and conditions are reported in Table 2.

As noted in Table 2, in every case the male high and male low communication apprehensives differed significantly in their interpersonal distance preferences. However, none of the comparisons between female high and low apprehensives were significant. For three targets (both best-friend targets and the new person, same sex target) the male low apprehensive Ss preferred greater distance than females in either apprehension condition. For the teacher most liked, the male high apprehensives preferred a significantly smaller distance than the female high apprehensives. Finally, for the teacher least liked, the high apprehensive males preferred a significantly larger distance than either condition of females, while the low apprehensive males preferred a significantly smaller distance than either condition of females.

Discussion

It is clear that an answer to our research question concerning interpersonal distance preferrences of high and low communication apprehensive individuals must take into account the sex of the individual and the degree of positive affect felt toward the target person. Interpretation of the results for female Ss is relatively unambiguous, since no significant difference between apprehension conditions was observed for any target person. Apparently, a female's level of communication apprehension does not mediate her interpersonal distance preference.

For males, on the other hand, apprehension level appears to be a mediating variable. For people that are liked or new acquaintances, high communication apprehensive males prefer interpersonal distances about 6 to 9 inches closer than those preferred by low communication apprehensive males. The reverse pattern exists when the target person is disliked. In fact, high apprehensives indicated a preference almost 2½ feet more distant than low apprehensives for the disliked teacher.

The explanation for the reversal of pattern between liked and disliked individuals may be a function of an interaction of distance and eye contact preferences. Previous research has suggested a linear relationship for males between eye contact and interpersonal distance--as distance increases, eye contact increases. Thus, to avoid eye contact (which tends to force increased interaction) in intimate and personal encounters, highly apprehensive males may move closer to another person. The data in this study point toward this explanation, particularly in light of the fact that the only significant difference observed between high apprehensive males and females in either apprehension condition was in the liked-teacher condition where the high apprehensive males preferred a smaller distance than the high apprehensive females, a reversal of the normal sexual preference pattern. The distance required for social-consultive interaction, such as with a disliked teacher, may result in a reversal of this general pattern. Since the minimum distance required (normative patterns suggest about four feet) makes avoidance of eye contact difficult for a male, the high apprehensive may move even farther away in an unconscious attempt to signal the other person that he wishes to keep the interaction as brief as possible. On the other hand, the low apprehensive male, as the data in this study tend to suggest, may move as close as possible within the social-consultive range in order to exert as much control of the interaction as possible to attain his desired objectives.

Conclusions

The main conclusion we can draw from this exploratory study is that communication apprehension is a probable mediator of interpersonal distance preferences of males, but not of females. However, replication of this research, preferably with different operationalizations of distance preference, is suggested prior to drawing any firm generalizations in this regard.

A second conclusion that may be advanced tentatively is that the simulation method for estimating distance preferences employed in this study holds considerable promise for generating valid data in future studies of interpersonal distance. The results of this method generated distances very comparable to those found in previous studies in more naturalistic environments and suggest the method should be considered by future researchers, particularly when unfunded, exploratory research is involved.

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TABLE 1

Expected and Observed Interpersonal Distance Preferences*

Source Induction	Type of Relationship	Distance Range Expected	Observed Male Ss Distance	Observed Female Ss Distance
Best Friend/ Opposite Sex	Intimate	0-18	12.7	11.2
Best Friend/ Same Sex	Intimate	0-18	26.5	15.3
New Person/ Opposite Sex	Personal	18-48	37.9	34.2
New Person/ Same Sex	Personal	18-48	40.5	30.3
Teacher/ Liked	Personal	18-48	37.3	32.4
Teacher/ Disliked	Social/ Consultive	48-120	65.3	58.4

*Recorded in inches.

TABLE 2

Mean Distance Preferences by Target, Sex, and Apprehension Level*

Subject Condition	Best Friend Opposite Sex	Best Friend Same Sex	New Person Same Sex	Teacher Most Liked	Teacher Least Liked
Male					
High Apprehensive	10.3a	19.0a	34.8a	16.6ab	76.8ab
Low Apprehensive	16.4ab	28.4ab	42.8ab	25.3a	47.2ac
Female					
High Apprhensive	11.0b	14.4b	32.5b	25.9b	60.9bc
Low Apprehensive	9.8b	14.7b	29.4b	19.6	59.0bc

*Recorded in inches.

a Means for same sex in same column are significantly different, $p < .05$.

b,c Means for opposite sex in same column are significantly different, $p < .05$.

COMMUNICATION APPREHENSION AND MARITAL RELATIONSHIPS OF COLLEGE GRADUATES: AN EXPLORATORY INVESTIGATION

James C. McCroskey and Monika M. Kretzschmar

ABSTRACT

An exploratory study is reported which indicates that high communication apprehensives are more likely to marry immediately upon graduation from college and have fewer children than moderate or low communication apprehensives. Low communication apprehensives were found to be more likely than others to describe their marriage as very unhappy and, if divorced, to perceive their spouse to most want the divorce.

Competitively selected paper presented at the annual convention of the Eastern Communication Association, New York, March, 1977.

Communication Apprehension and Marital Relationships
of College Graduates:
An Exploratory Investigation

Research related ot oral communication apprehension (CA) has expanded rapidly in recent years. Much of this research has focused on the correlates and effects of CA. The results of this research have indicated that people with high levels of CA, as compared to people with low levels, tend to avoid and withdraw from communication, be perceived negatively by others, are less satisfied in their employment, do less well in academic work, and be less likely to register or vote.[1]

Comparatively little attention has been directed toward possible differences in social behaviors among people with differing levels of CA. The one study reported in this area found that, among college students, people with high levels of CA (as compared with people with lower levels) were less likely to interact with peer strangers, were less likely to accept a blind date, had less dates, but were more likely to engage in exclusive (steady) dating.[2] The authors of that study called for additional research designed to determine whether the social pattern observed was unique to the college environment or symptomatic of a life-long pattern. Two hypotheses advanced in that paper were considered in the present investigation. They were:

H_1: High communication apprehensives marry at an earlier age than low communication apprehensives.

H_2: High communication apprehensives are less likely to seek a divorce than are low communication apprehensives.

Both of these hypotheses are based on the underlying assumption that people with high CA, like other people, have a need for love and affection but that it is more difficult for them to engage in the necessary social interaction with others to find a mate. Consequently, if they find someone acceptable they are more likely to desire to make a permanent bond (marriage) than people who find social interaction easier and more pleasant. A crucial period for the college student with high CA, therefore, occurs at the time of graduation. This is a period requiring geographical relocation for many students and, hence, the decision to marry or allow a college relationship to terminate. We hypothesized, therefore, that college graduates with high CA will marry more frequently at ages 21 and 22 (the age of most students at graduation) than any other age, but no similar pattern will be observed for people with lower levels of CA.

With regard to the divorce hypothesis, we were less confident in the underlying rationale. Although the desire to maintain a relationship should be stronger for the person with high CA, and thus a stronger pressure against divorce, divorce statistics indicate a strong relationship between early marriage and frequency of divorce. Hence, if people with high CA marry younger we should predict they would be more likely to divorce later. Consequently, we approach the divorce issue with a research question rather than a directional hypothesis. That question was: Do college graduates with high and low levels of CA differ in frequency of divorce?

In addition to the behavioral questions raised by the hypothesis and research question noted above, we were also concerned with potential attitudinal

differences among both married and divorced individuals that could be a function of CA level. Any clear differences in attitudes would help explain differences (or lack of same) observed in behavior. Consequently, we posed the following research questions: Among married college graduates, do individuals with high and low CA differ in the degree to which they see their marriage as "happy?" Among divorced college graduates do individuals with high and low CA differ in the degree to which they see themselves (as opposed to their former spouse) as the instigator of the divorce?

One final research question was posed for this exploratory investigation: Among college graduates do people with high and low CA differ in the number of children they have? Since children impose considerable demand on parents for communication, particularly as they mature beyond infancy, we suspected that people with high CA might be likely to have less children than would people with lower CA. However, since there has been no previous research in this area, we chose to explore this possibility with a research question rather than a formal, directional hypothesis.

Method

A total of 571 college graduates living in five Eastern states (Maryland, Ohio, Pennsylvania, Virginia, and West Virginia) served as subjects in this study. Of the 571 subjects, 457 were married or had been, 114 had never been married, and 44 were divorced. The ages of the subjects ranged from 21 to 77. All were employed as teachers, administrators, or teacher's aides in public or private schools. There were 492 females and 81 males. Twenty-eight subjects did not record their sex.

Subjects were asked to complete a 10-item measure of CA. The measure was a short form of the PRCA-3 which had been found to correlate .90 with the longer form in previous research. The internal reliability of the instrument was estimated to be .85 for this sample. In addition, the subjects were asked to indicate their age, sex, whether they had ever been married, and (if once married) the number of children they had, whether they had ever been divorced, and if so, whether they or their spouse most wanted the divorce. They were also asked to estimate the happiness of their first marriage on a 9-point scale bound at the extremes by "very unhappy" and "very happy".

Subjects who scored beyond one standard deviation above the mean on the CA measure were classified as high apprehensive, those scoring beyond one standard deviation below the mean were classified as low apprehensive. The remaining subjects were classified as moderate. A preliminary analysis of the data indicated that there was no difference in mean CA scores for married and unmarried subjects. The means for both were 29.1. Similarly, there was no difference in frequency of high-moderate-low classifications between the two groups (chi-square = 1.32, $p > .50$). Since never-married subjects were not involved in the hypothesis or research questions for this study, they were not included in subsequent analyses.

The data relating to the hypothesis concerning age of marriage were analyzed by means of a 3 X 3 chi-square. One independent variable was apprehension level (low, moderate, and high) and the other was time of marriage (below 21, 21 or 22, and over 22).

To analyze the data relating to the question concerning the relationship between CA level and divorce, the data were analyzed by means of a 2 X 3 chi-square. The three levels of CA served as one classification and marital status (divorced-not divorced) served as the other.

Because of the doubious intervalidity of the happiness measure and its unknown reliability and validity, it was decided to reduce the responses on the scale to the nominal level. Respondents marking 1 or 2 were classified as unhappy, those marking 8 or 9 were classified as happy, and the remainder were classified as moderate. The data were then analyzed by means of a 3 X 3 chi-square (3 levels of CA, 3 levels of happiness).

The data relating to who most desired a divorce obtained from the divorced subjects were analyzed by a 2 X 3 chi-square, with CA level as one classification variable and individual most wanting the divorce (self or spouse) serving as the other.

The number of children the subjects reported having ranged from none to eight. The mean was only 1.2 and the distribution was markedly skewed. Consequently, it was decided to reject parametric analysis of these data in favor of a chi-square analysis. Hence, subjects were classified as either having below the median number of children (0 or 1) or above the median (2-8). The 2 X 3 chi-square performed employed these classifications as one variable and the three CA levels as the other.

The .05 Alpha level was set for the significance of all tests.

Results

The results of the analysis of the data concerning age at marriage indicated a significant association between marriage age and level of CA (chi-square = 10.71, d.f. = 4, $p < .05$). As indicated in Table 1, subjects with either moderate or low CA presented no apparent age pattern, distributing themselves almost equally across the three age classifications. People with high CA, however, showed a marked pattern. Over half of the subjects in this group were married at ages 21 or 22.

The analysis of the data related to CA level and divorce indicated no significant association between these variables (chi-square = 1.48, d.f. = 2). There was, however, a significant association (see Table 2) found between CA and happiness level among the married subjects (chi-square = 13.29, d.f. = 4, $p < .05$).

The results of the analysis of who most desired the divorce (among divorced subjects) indicated a significant association between CA level and desire for divorce (chi-square = 6.12, d.f. = 2, $p < .05$). While both moderate and high CA people saw themselves most wanting the divorce, the low CA people reported that their spouses wanted it more (see Table 3).

The results relating to CA level and number of children are reported in table 4. The chi-square analysis which included all three CA levels failed to show a significant relationship at the pre-set alpha level (.05). However, the observed pattern was suggestive. A post hoc comparison of the extreme CA

conditions yielded a significant result (chi-square = 5.55, $p < .05$) indicating people with high CA are less likely to have more than one child than are people with low CA.

Discussion

Conclusions drawn from the results of this study must be tempered by an understanding of the population from which the subject sample was drawn. While in this exploratory study we were most interested in college graduates, and selected this sample because it was composed entirely of such individuals, the fact that all subjects were teachers argues convincingly against assuming the sample to be representative of all college graduates. This is particularly important in our interpretation of the results relating to the research questions concerning divorce. Only eight percent of our sample was divorced, far fewer than would be found in a representative sample of college graduates. With these reservations in mind, we may draw some tentative conclusions that may be suggestive of directions for future research.

The conclusion that we may draw with most confidence is that college graduates with high levels of CA tend to marry upon graduation. Over half of the subjects in this study who had high levels of CA married at ages 21 or 22, the typical age of college graduation. No similar pattern was observed for people with lower levels of CA. This finding suggests that the social behavior of college students with high CA is not unique to the college setting but continues into marriage after graduation. In fact, the percentage of highly apprehensive college students who were found to engage in steady dating (54%)[4] was exactly the same percentage we found to marry upon graduation.

With respect to CA and divorce, this study does not permit firm conclusions. The small sample of divorced persons we obtained suggests that our non-significant finding concerning CA and probability of being divorced could well be a function of low power. Our finding that divorced people with low CA are more likely to view their spouse as wanting the divorce while moderates and highs see themselves as wanting the divorce, while intriguing, must be replicated before it can be interpreted with confidence.

The results obtained concerning marital happiness also must be interpreted with extreme coution. While the scale employed to measure happiness has a degree of face validity, its reliability is unknown and may suffer from extreme impact of social desirability. As indicated in table 3, the overwhelming majority of subjects at all CA levels viewed their marriage as very happy. Nevertheless, a significant difference was observed which suggests that people with low levels of CA may be more likely than others to view their marriage as unhappy.

The results concerning the possible relationship between level of CA and number of children, although of marginal statistical significance, are intriguing. The pattern observed was that as CA level increases, number of children decreases. However, since the median family size reported in this study was substantially below national norms, this phase of the study clearly needs replication before firm conclusions are drawn.

The major conclusion that may be drawn from this exploratory study is that additional research directed toward possible relationships between level of CA and social behavior as it related to marriage and family should be expected to yield meaningful results. On the basis of the findings in this study it is reasonable to conclude that it is most unlikely that relationships between CA and social behavior found in previous research with college students are unique to people in that environment.

Footnotes

1 cf. James C. McCroskey, "Oral Communication Apprehension: A Summary of Recent Theory and Research," Paper presented at the Conference of Directors of the Basic Course in Communication, Boston, 1976.

2 James C. McCroskey and Michael E. Sheahan, "Communication Apprehension, Social Preference, and Social Behavior in a College Environment." Paper to be presented at the annual convention of the International Communication Association, Berlin, 1977.

3 James C. McCroskey, "Measures of Communication-Bound Anxiety," Speech Monographs, 1970, 37, 269-277.

4 McCroskey and Sheahan.

TABLE 1

Frequency and Percentage of Age of Marriage by CA Level*

Marriage Age	CA Level Low	Moderate	High
Below 21			
Frequency	24	97	17
Percentage	30.8	32.3	21.5
21 or 22			
Frequency	25	111	43
Percentage	32.1	37.0	54.4
Over 22			
Frequency	29	92	19
Percentage	37.2	30.7	24.1

* Chi-square = 10.71, 4 d.f., $p < .03$.

TABLE 2

Frequency and Percentage of Reported Happiness Level by CA Level*

Happiness Level	CA Level Low	Moderate	High
Low			
Frequency	9	23	3
Percentage	13.4	8.6	4.3
Moderate			
Frequency	12	47	21
Percentage	17.9	17.5	30.4
High			
Frequency	46	199	45
Percentage	68.7	73.9	65.2

* Chi-square = 13.29, 4 d.f., $p < .02$. Reduced sample size is a result of exclusion of divorced subjects and failure of some subjects to complete this scale.

TABLE 3

Frequency and Percentage of Who Most Wanted Divorce by CA Level*

Who Wanted Divorce	CA Level Low	Moderate	High
Self			
Frequency	2	20	8
Percentage	28.6	74.1	80.0
Spouse			
Frequency	5	7	2
Percentage	71.4	25.9	20.0

* Chi-square = 6.12, d.f. = 2, $p < .05$.

TABLE 4

Number of Children by CA Level*

Number of Children	CA Level Low	Moderate	High
None or One			
Frequency	45	198	61
Percentage	57.7	65.3	75.3
Two or More			
Frequency	33	105	20
Percentage	42.3	34.7	24.7

* Chi-square (including 3 CA levels) = 5.56, d.f. = 4, $p < .10$.
Chi-square (high CA and low CA only) = 5.55, d.f. = 2, $p < .03$.